L 29935-66 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AR6010650 SOURCE CODE: UR/0276/65/000/010/B070/B070

AUTHOR: Gnusin, N.P.; Nechayev, Ye. A.; Kutyukov, G. T.; Lavrova, T.A.

TITLE: Comparative evaluation of the existing methods of cadmium plating from non-cyanide solutions 39 B

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya, Abs. 10B440 10

REF SOURCE: Sb. dokl. k Novosib. nauchno-tekhn. konferentsii po mashinostr. Ch. 1. Novosibirsk, 1964, 129-134

TOPIC TAGS: metal plating, cadmium compound, electrolyte, ammonium salts

ABSTRACT: Results are given of studying basic electrolytes for cadmium plating and the technological parameters of their work are compared. It is noted that good results are obtained from complex ammoniate salts. The outlook for further improvement of electrolites based on amino compounds is stressed.

SUB CODE: 11,07/ SUBM DATE: none

Card 1/1 CC

KUTYUMOV, P.S.

Torch lines and safety valves in petroleum and gasoline refineries.
Azerb.neft.khoz. 35 no.5:25-27 My '56. (MLRA 9:10)

(Petroleum--Refining)

KUTYUMOV, P.S.

Fractionation absorption tower. Azerb. neft. khoz. 36 no.4:32-35 Ap '57. (MLRA 10:6)
(Adsorption) (Petroleum--Refining)

KUTYUMOV, P.S.

Qualitative characteristics of absorbents. Azerb.neft.khoz. 36 no.7:38-40 Jl '57. (MIRA 10:10)
(Absorbents)

KUTTMOV, P. S.: Master Tech Sci (diss) -- "Analysis of the operation of absorption equipment in the treatment of hydrocarbon gases". Baku, 1[illegible]. 18 pp (Min Higher Educ USSR, Azerb Order of Labor Red Banner Industrial Inst im M. Azizbekov), 150 copies (KL, No 5, 1[illegible], 1[illegible])

KUTYUMOV, Petr Stepanovich; KLEYMENOVA, K.F., vedushchiy red.; POLOSINA, A.S., tekhn.red.

[Gas fractionating equipment; operational practice] Gazofraktsioniruiushchie ustanovki; opyt ekspluatatsii. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 65 p. (MIRA 12:9)

(Petroleum--Refining) (Absorption)

SOV/65-59-4-12/14

AUTHOR: Kutyumov, P.S.

TITLE: P.A.Smirnov's Article on Lay-out of Gas-Separating Plants in Petroleum Refineries (O stat'ye P.A.Smirnova „Skhemy gazorazdelitel'nykh ustanovok na neftepererabatyvayushchikh zavodakh„)

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1959, Nr 4, pp 65-67 (USSR)

ABSTRACT: This is a detailed criticism of an article by P.A.Smirnov on "Lay-out of Gas-Separating Plants in Petroleum Refineries" which was published in Khimiya i technologiya topliv i masel, 1958, Nr 9. Various modifications of the plant are suggested.

Card 1/1

KUTYUMOV, P.S.

Selecting an efficient method for refining gas and condensate from the Karadag field. Azerb. neft. khoz. 38 no.3:30-32 Mr '59. (MIRA 12:6)

(Karadag region--Gas, Natural)

VOLOKH, Samuil Markovich, prof.; KUTYUMOV, P.S., red.; AL'TMAN, T.B., red. izd-va

[Principles of accurate laboratory control in gas fractioning plants]Osnovy pravil'nogo laboratornogo kontrolia na gazofraktsioniruiushchikh ustanovkakh. Baku, Azerbaidzhanskoe gos. izd-vo neftianoi i nauchno-tekhn. lit-ry, 1960. 21 p. (MIRA 15:7)

(Gases--Analysis)

K[illegible]KOV, P.S.; GAMIDZADE, G.A.; MIL'MAN, V.M.

Industrial production of "Azolate-A." Izv. vys. ucheb. zav.; neft' i gaz 3 no.12:121-123 '60. (MIRA 14:10)
(Benzenesulfonic acid)

KUTYURIN, V. M.

KUTYURIN, V. M. "The Use of Tagged Atoms to Study the Mechanism of the Oxidation-reduction Transformation of Chlorophyll in the Photosynthesis Process." Acad Sci USSR. Inst of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy. Moscow, 1956. (Dissertation for Degree of Candidate in Chemical Science)

So: Knizhnaya Letopis', No. 17, 1956.

KUTYURIN, V. M.

407
THE RATE OF DEUTERIUM PENETRATION INTO PLANT TISSUE. V. M. Kutyurin (Institute of Geochemistry and Analytical Chemistry, Moscow). Biochemistry (U.S.S.R.) 21, 43-5(1956) Jan.-Feb. (In English)

Kutyurin, V.M.

The rate of deuterium penetration into plant tissue. V. M. Kutyurin (Inst. Geochem. and Anal. Chem., Acad. Sci. U.S.S.R., Moscow). *Biokhimiya* 21, 50-2(1956).—A mobile equil. exists between the content of heavy water in the cellular H_2O and in the H_2O of the surrounding medium, which is independent of light influence. The rate of deuterium penetration and the equil. concn. is a function of temp. and is independent of the concn. of deuterium and of the pH of the medium. The observed similarity between the penetration into plant tissue of deuterium and tritium is an indication of the similarity in their behavior in plant tissue, similar to the case previously found in expts. with animal tissues (cf. Thompson and Ballon, *Arch. Biochem. Biophys.* 42, 210(1953)). B. S. Levine

Kutyurin, V. M.

USSR/ Biology - Plant physiology

Card 1/1 Pub. 22 - 49/54

Authors : Kutyurin, V. M.

Title : Regeneration of chlorophyll molecules in plants

Periodical : Dok. AN SSSR 106/2, 355-357, Jan 11, 1956

Abstract : Scientific data are presented on chlorophyll molecule regeneration in plants. Four references: 3 USSR and 1 French (1948-1954). Tables; graph.

Institution : Acad. of Sc., USSR, Inst. of Geochem. and Anal. Chem. im. V. I. Vernadskiy

Presented by: Academician A. P. Vinogradov, September 10, 1955

KOTYUKIN, V. M.

Conditions and mechanism of synthesis of phosphoryl choline containing phosphorus-32. A. [illegible], [illegible] [illegible], and V. M. Kuznets[illegible] ([illegible]). Zhur. Obshchei Khim. 27, 1285-[illegible]. P^{32} (red form) gave labeled P_2O_5 which was quenched in H_2O with heating to yield labeled H_3PO_4. This ([illegible] g.) treated with 2.3505 g. choline chloride was heated to 100°/1-2 mm. (optimum conditions) until HCl evolution ceased; the mass was then treated with 4.[illegible] g. [illegible] and heated as above 3[illegible] hrs. After treatment with aq. NH_4OH with boiling 1 hr. the phosphate [illegible] was pptd. with magnesia mixt. and the filtrate on treatment with $CaCl_2$ gave Ca salt of phosphoryl choline after addn. of EtOH. The incorporation of P^{32} occurs through both the P_2O_5 and H_3PO_4 components of the mixt.; at 1-2 mm. both participate equally. No exchange of P^{32} occurs between phosphoryl choline and mono-salts of H_3PO_4 in neutral or acid media at 100°. This indicates a very stable ester link.

G. M. Kosolapoff

KOTYUKIN, V.N.

PHASE I BOOK EXPLOITATION SOV/5463

Sovetskaya antarkticheskaya ekspeditsiya

Vtoraya morskaya ekspeditsiya na d/e "Ob'", 1956-1957 gg.; obshcheye opisaniye i nauchnyye rezul'taty (Second Marine Expedition on the Diesel-Electric Ship "Ob'", 1956-57; General Description and Scientific Results) Leningrad, Morskoy transport, 1959. 175 p. (Series: Its: [Materialy] no. 5) Errata slip inserted. 1,200 copies printed.

Sponsoring Agency: Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.

Ed. (Title page): I. V. Maksimov, Doctor of Geographical Sciences, Professor, Ed.: L. G. Kaplinskaya; Tech. Ed.: O. I. Kotlyakova.

PURPOSE: This book is intended for oceanographers, meteorologists, and hydrochemists.

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Second Marine Expedition (Cont.) AM 5413

COVERAGE: The present volume, the fifth in a series of seven, is a collection of articles (except for two devoted specifically to the oceanographic, meteorological, and hydrochemical findings of the Second Soviet Marine Expedition conducted on the diesel ship "Ob'" (I. A. Man, Captain-Lieut., 1955-56). The first two articles outline the Expedition's organization and program, and provide a general account of its activities during the 224-day voyage, which covered more than 40,000 miles of the Atlantic, Antarctic, and Indian Oceans. The expedition was sponsored by the Arctic and Antarctic Scientific Research Institute of the Glavsevmorput' Ministerstva morskogo flota SSSR (Main Administration of the Northern Sea Route of the Ministry of the Merchant Marine of the USSR) as part of the International Geophysical Year program. Its purpose was to investigate 1) atmospheric processes in the Antarctic region and their effect on the earth's general circulation, 2) basic regularities in the distribution of waters in the southern oceanic zone, 3) exchange of the waters of the southern seas with the waters of the world ocean, 4) geological structure of the sea bottom in the Antarctic region, and 5) the plankton, benthos

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ichthyofauna, and microorganisms of the Antarctic waters. Observations of the magnetic field of the earth were also made. The expedition, headed by Professor Igor' Vladislavovich Maksimov, Doctor of Geographical Sciences and Professor at the Leningradskoye vysshiye inzhenernoye morskoye uchilishche imeni S. O. Makarova (Leningrad Higher Marine Engineering School imeni S. O. Makarov), consisted of the following 5 scientific task forces: aerometeorological (headed by Leonid Gennadiyevich Sorokin), hydrological (Kirill Vladimirovich Moroshkin), geological (Aleksandr Petrovich Lisitsyn), hydrochemical (Aleksey Nikolayevich Ivanenkov), hydrobiological (Viktor Aleksandrovich Arsen'yev), geophysical (Nikolay Panteleymonovich Grushinskiy), geographic (Gravriil Dmitriyevich Ushakov), and hydrographic (Yuriy Aleksandrovich Goreyev). A complete list of the names and affiliations of the 65 scientific and administrative members of the expedition is contained in the first article. The articles were written by members of the Institut okeanologii Akademii nauk SSSR (Institute of Oceanology, Academy of Sciences USSR), Gosudarstvennyy okeanograficheskiy institut Gidrometsluzhby SSSR (State Oceanographic Institute of the Hydro-

Card 3/6

Second Marine Expedition (Cont.) SOV/5-58

meteorological Service of the USSR), Vsesoyuznyy nauchno-issledovatel'skiy institut rybnogo khozyaystva i okeanografii (All-Union Scientific Research Institute of Fisheries and Oceanography), and the Arctic and Antarctic Scientific Research Institute. There are no references.

TABLE OF CONTENTS:

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Second Marine Expedition (Cont.) LOT 5463

Katyurin, V. M. Determining the Content of Chlorophyll in Sea Water and the Spectral Analysis of Phytoplankton Pigments 173

AVAILABLE: Library of Congress (G660.S53)

Card 6/6

JA/dwm/bc
[illegible]

5(7),3(9)

AUTHORS: Vinogradov, A. P., Kutyurin, V. M., Zadorozhnyy, I. K. SOV/1-59-3-1/13

TITLE: Fractionation of the Isotopes of Atmospheric Oxygen (Fraktsionirovaniye izotopov atmosfernogo kisloroda)

PERIODICAL: Geokhimiya, 1959, Nr 3, pp 195-200 (USSR)

ABSTRACT: Compared with the oxygen of the hydrosphere and of photosynthesis, atmospheric oxygen has a higher content of the isotope O^{18} (Table 1). The present paper was written for the purpose of explaining this difference. The two-beam mass spectrometer MS-2 was used for measurements, and atmospheric oxygen was used as standard. Investigations were carried out of the oxygen of the photosynthesis of diatom algae carried out at the Sevastopol'skaya biologicheskaya stantsiya (Chernoye more) (Sevastopol' Biological Station (Black Sea)) and of the fresh-water plant Elodea canadensis (Table 2). Herefrom results a coefficient of O^{18} enrichment in the atmosphere of 1.018. Moreover, fractionation in the cell was investigated: A minimum effect (α=0.997) occurred only in the case of considerable humidity. A thorough investigation was carried out of

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fractionation in the ocean. The samples were collected during the second voyage of the Morskoya Antarkticheskaya ekspeditsiya na d/e "Ob'" (Antarctic Sea Expedition of the Diesel-electric vessel "Ob'"). The points where samples were taken are shown on a chart. Samples were taken from various depths at each place (Table 3); the 3 plates the variation of the total oxygen- and O^{18} content with depth is graphically represented (Figs 2-6). The fractionation coefficient is 1.010; this is not sufficient in order to be able to explain the high O^{18}-content of the atmosphere. According to the authors this content is a function of the CO_2-content of the atmosphere. The reason for this is the dissociation of CO_2 in the stratosphere. This would provide the possibility of drawing conclusions from the isotope-ratio in fossils with respect to the concentration of CO_2 in the previous atmosphere. There are 7 figures, 3 tables, and 13 references, 5 of which are Soviet.

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Fractionation of the Isotopes of Atmospheric Oxygen SOV/7-59-3-1/13

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, AS USSR Moscow)

SUBMITTED: January 14, 1959

Card 3/3

17(1)

AUTHORS: Vinogradov, A. P., Academician, Kutyurin, V. M., SOV/20-125-5-54/61
Ulubekova, M. V., Zadorozhnyy, I. K.

TITLE: The Isotopic Composition of Photosynthetic Oxygen (Izotopnyy sostav kisloroda fotosinteza)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 5, pp 1151-1153 (USSR)

ABSTRACT: The oxygen mentioned in the title occurs in water and is the result of dehydrogenation (Refs 1,2). The attempt was made to interprete the difference between the isotopic composition of oxygen occurring in water and obtained from the photosynthesis (1 - 2.5‰) as a methodical mistake or by an exchange between oxygen separated in the photosynthesis and cellular water (Ref 3). Without knowledge of the mechanism of oxygen separation in the photosynthesis the probability of such an exchange could not be denied (Ref 3). This exchange was, however, soon refuted: in the electrolysis (Ref 4) as well as in the case of the catalase effect (Ref 5) no exchange takes place between O_2 and H_2O, OH, HOOH as well as -O-O-. Since it was therefore necessary to define precisely the composition mentioned in the title, especially for marine organisms, the authors

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investigated the topic mentioned with the water weed (Elodea canadensis) (fresh water), on the one hand, and with phytoplankton (mainly Diatomaceae algae, sea water), on the other hand. The photosynthesis took place in water treated with argon free from oxygen (O_2-content 0.3-1 ml/liter) at sunny weather and under optimum conditions. Table 1 shows the results. The disturbing effect of the residual respiration oxygen, which was heavier in consequence of preferred absorption of O^{16}, was eliminated as far as possible by repeated extraction of the oxygen produced by photosynthesis. The method used for fresh water and the water weed had to be replaced by that of Winkler for marine plankton since the extraction of oxygen weakened the intensity of the photosynthesis. The average value of the isotope content of the photosynthetic oxygen of marine phytoplankton (0.2002) (O^{18} related to O^{17}; the small content of O^{17} was neglected) is higher only by 0.0009%, i. e. higher by 1.0 ‰ than that of sea water (mass-spectrum determination in Table 2). This means that 90% of the photosynthetic oxygen occurs in water. In the case of the water weed a similar calculation yields 82%. In the experiments with the

The Isotopic Composition of Photosynthetic Oxygen SOV/20-125-5-54/61

water weed the respiration intensity was not determined. By eliminating the respiration the isotopic composition of photosynthetic oxygen approaches in all cases that of water so far that undoubtedly the total photosynthetic oxygen occurs in water. Inconsiderable deviations of the isotope content in photosynthetic oxygen from the isotopic composition of water in the experiments with the water weed and in the experiment Nr 2 with marine phytoplankton resulted from the deviation of the fractionating coefficients of the oxygen isotopes in the respiration from the assumed average value. There are 2 tables and 8 references, 2 of which are Soviet.

SUBMITTED: January 16, 1959

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KUTYURIN, V.M.

Photochemical exchange of hydrogen atoms of chlorophyll in photosynthesis. Fiziol. rast.7 no.2:133-140 '60. (MIRA 14:5)

1. V. I. Vernadskiy Institute of Geochemistry and Analytical Chemistry, U.S.S.R Academy of Sciences, Moscow.
(Photosynthesis)
(Chlorophyll)

81662

S/020/60/134/006/031/031
B016/B067

17.1156

AUTHORS: Vinogradov, A. P., Academician, Kuryurin, V. M., Ulubekova, M. V., and Zadorozhnyy, I. K.

TITLE: Isotopic Composition of the Oxygen of Photosynthesis and Respiration

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 6, pp. 1486-1489

TEXT: In an earlier paper (Ref. 1) the authors had arrived at the conclusion that the difference between the isotopic composition of the oxygen of photosynthesis and of water oxygen can be explained. This is due to the fractionation of the oxygen isotopes during respiration, which enriches the oxygen remaining after respiration with O^{18} thus making it heavier. Since photosynthesis and respiration take place simultaneously, the oxygen analyzed is that which was not consumed in respiration. Its isotopic composition depends on the ratio of the intensities of these two processes, furthermore on the fractionation coefficient of the oxygen isotopes during respiration. The authors are of the opinion that the mean

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Isotopic Composition of the Oxygen of Photosynthesis and Respiration

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value of this coefficient α = 1.018 assumed in publications (Ref. 3) can hardly be used for the calculations in the individual case. To determine the quantitative influence of respiration on the isotopic composition of the oxygen of photosynthesis they tried to determine simultaneously the α of respiration and the isotopic composition. For this purpose they used cultures of Scenedesmus obliquus and the water plant Elodea canadensis which were investigated in an apparatus (Fig. 1). Fig. 2 shows the apparatus used for the purification of the gas. The experiments with both types of plants were made with an exposure of 5500 lux and at pH 7. The remaining conditions are given in Tables 1 and 2. The data obtained (Table 1) show that the fractionation coefficient of the oxygen isotopes during the respiration of both plants depends on the physiological state of the plants. In endurance tests (18-20 h), when plants are starving, the respiration intensity is reduced to 1/5 to 1/10, while the coefficient α, however, rises, i.e., the degree of fractionation increases under unfavorable conditions. This recalls the metabolism of sulfur bacteria (Ref. 7). The difference between the fractionation coefficient of Scenedesmus and Elodea indicates the specifity of the oxygen metabolism in different types of plants. This confirms the above mentioned doubts

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Isotopic Composition of the Oxygen of Photosynthesis and Respiration

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as to the usability of a mean coefficient α for all plants. As to the use of this coefficient for each type of plant the authors hold the opinion that the influence exerted by respiration on the isotopic composition (on the example of Scenedesmus and Elodea) can be determined by determining α under the conditions of photosynthesis. The authors arrive at the conclusion that the opinion expressed in the beginning concerning the "rendering heavier" of photosynthesis oxygen by respiration is correct, and they derive equations (1) and (2) for the isotopic composition of the oxygen remaining after respiration as well as for the respiration intensity. K. P. Florenskiy is mentioned (Ref. 4). There are 2 figures, 2 tables, and 10 references: 4 Soviet and 3 US.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the Academy of Sciences, USSR)

SUBMITTED: July 29, 1960

Card 3/3

KUNYURIN, V. M. (Dr.) (USSR)

"Photochemical Hydrogen Exchange In Chlorophyll".

report to be submitted for the Photosynthesis Symposium, 5th Int'l Congress of Biochemistry, Moscow, 10-16 Aug 1961.

[redacted], [redacted]

"Photochemical Exchanges of the Electron Pairs of Chlorophyll during Photosynthesis."

Report presented at the 5th International Biochemistry Congress, Moscow, 1-8 August 1961

KUTYURIN, V. M., CHIBISOV, A. K., ULUBEKOV, N. V., and KARYAKIN, A. V.
(USSR)

"Spectroscopic Study of Chlorophyll and its Dervatives in vitro."

Report presented at the 5th International Biochemistry Congress, Moscow, 10-16 Aug 1961

KUTYURIN, V. M., VINOGRADOV, A. P., (USSR)

"The Mechanism of Dehydration of Water in the Process of Photosynthesis."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug 1961.

KARYAKIN, A.V.; KUTYURIN, V.M.; CHIBISOV, A.K.

The state of the water in chlorophyll molecule. Dokl. AN SSSR 140 no.6:1321-1323 O '61. (MIRA 14:11)

1. Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo AN SSSR. Predstavleno akademikom A.P.Vinogradovym.
(Water) (Chlorophyll--Spectra)

55456

27.1110

020/61/141/003/020/021
B103/B101

AUTHORS: Kutyurin, V. M., Karyakin, A. . . Chibisov, A. K., and Artamkina, I. Yu.

TITLE: Isotopic exchange of hydrogen atoms in chlorophyll

PERIODICAL: Akademiya nauk SSSR. Doklady v. 141, no. 3, 1961, 744 - 747

TEXT: Degree and rate of deuteron exchange of chlorophylls a and b with D_2O were studied (1) on the basis of infrared spectra, (2) on the basis of the exchange between chlorophyll and T_2O. The authors used chlorophyll preparations (a and b) obtained from small nettle (Urtica urens) by methods described earlier (V. M. Kutyurin et al., Fiziol. rast., 8, no. 4 (1961)). Solid pigment films were produced on a fluorite plate by evaporation of etheral solutions. The spectra of such films were recorded by a UR - 10 split-beam infrared spectrophotometer. The films were exposed to D_2O or H_2O vapors in vacuum vessels with fluorite windows (at $3 - 5 \cdot 10^{-6}$ mm Hg). So far, it has been difficult to study the hydrogen exchange of chlorophylls due to a lack of reliable purity criteria of chlorophyll preparations and

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their hygroscopicity. The authors eliminated these difficulties (V. M. Kutyurin, Fiziol. rast., 7, no. 2, 133 (1960); A. V. Karyakin et al., DAN, 140, no. 6 (1961)). In the spectra of solid films of chlorophylls a and b, a wide, asymmetric, intensive band (3600 - 3200 cm^{-1}) occurs which belongs to the ν(O-H) of water molecules bound to the pigments. The intensity of this band in chlorophyll a was reduced by exposure to D_2O vapor for 5 min. In addition, an absorption band occurred in the region 2600 - 2400 cm^{-1}, which characterizes ν(O-D) of the exchanged molecules. This process was continued and intensified by repeated pigment treatment with D_2O vapor at room temperature until, after 15 hr, a complete deuterium exchange of H_2O bound by the pigment was reached. On the basis of these results and repeated treatment in vacuo at 58 - 60°C and in D_2O and H_2O vapors, the following was concluded: The bonds between absorbed water (H_2O and D_2O) and pigments a and b, respectively, are not equally firm. The rates of isotopic exchange of the two types of water also differ. A striking connection exists between the unstable bond of water in chlorophyll a on the one hand, and an intense isotopic exchange in this chlorophyll as com-

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pared to chlorophyll b, on the other hand. In molecules of chlorophyll a, the isotopic exchange of enol (O-H or O-D) is much more difficult than it is in the case of unstably bound water. Interaction of water and pigment probably takes place at the O atoms of the cyclopentane ring. The probability of an isotopic exchange of the C-H bond, which is only a few percents, cannot be checked due to insufficient precision of the spectrum method. Therefore, T_2O was used for the chlorophyll exchange in acetone, alcohol, and pyridine in light (50,000 lux), and in the dark. T_2O allows an estimation of the exchange within 0.1%. The pigment solution and water were degassed in a special permanently air-tight vessel in vacuo ($p \leq 10^{-2}$ mm Hg) to prevent photooxidation of the pigment. 20% by volume of water containing T_2O was added to chlorophyll. Desiccated pigment was burned in dry O_2, the resulting water was completely decomposed with calcium carbide, and the radioactivity of acetylene thus formed was measured with an ОБ - 7(Sb - 7) counter. Light was found to stimulate the isotopic exchange but little. Disagreement with results obtained in previous studies (V. M. Kutyurin, Fiziol. rast., 7, no. 2, 133 (1960); Ref. 4, see below) is probably due to the action of humidity and, above all, to the label loss. So far, it

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cannot be said whether the residual activity of chlorophyll preparations is due to an exchange of the $H\text{-}C_{10}\text{-}C(=O)$ bond or of the firmly bound chlorophyll

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b water. There are 3 figures, 1 table, and 4 references: 3 Soviet and 1 non-Soviet. The reference to English-language publication reads as follows: Ref. 4: W. Vishniac, I. A. Rose, Nature, 1957, No 4642 (1958).

ASSOCIATION: Institut geokhimii i analiticheskoy khimii (Institute of Geochemistry and Analytical Chemistry)

PRESENTED: July 28, 1961, by A. P. Vinogradov, Academician

SUBMITTED: July 20, 1961

KUTYURIN, Vladimir Mikhaylovich; PCHELINTSEVA, G.M., red.; VLASOVA, N.A., tekhn. red.

[Labeled atoms and photosynthesis] Mechenye atomy i fotosintez. Moskva, Gosatomizdat, 1962. 87 p. (MIRA 15:7)
(Photosynthesis) (Radioisotopes--Physiological effect)

KUTYURIN, V.M.; ULUBEKOVA, M.V.; ARTAMKINA, I.Yu.

Method for extracting chlorophyll from plants. Fiziol. rast. 9 no.1:115-120 '62. (MIRA 15:3)

1. V.I.Vernadskiy Institute of Geochemistry and Analytical Chemistry, U.S.S.R. Academy of Sciences, Moscow.
(Chlorophyll)

KUTYURIN, V.M.; ARTAMKINA, I.Yu.

Determining the purity of chlorphyll. Fiziol.rast. 9 no.4:493-496 '62. (MIRA 15:9)

1. Institut geokhimii i analiticheskoy khimii AN SSSR, Moskva.
(CHLOROPHYLL)

KUTYURIN, V.M.

Amperometric method for the determination of oxygen in water. Zhur. anal.khim. 18 no.6:765-768 Je '63. (MIRA 16:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Water--Analysis) (Oxygen--Analysis) (Conductometric analysis)

KUTYURIN, V.M.; KNYAZEV, V.P.

Water content in a - and b-chlorophyll. Dokl. AN SSSR 149 no.2: 456-459 Mr '63. (MIRA 16:3)

1. Predstavleno akademikom A.P.Vinogradovym.
(Chlorophyll)

L 12978-63 EWT(l)/BDS/ES(a)/ES(j)/ES(c)/ES(k) AFFTC/ASD Pb-4
A/DD

ACCESSION NR: AP3000527 S/0020/63/150/002/0411/0413

AUTHOR: Vinogradov, A. P. (Academician); Kutyurin, V. M.; Ulubekova, M. V.; Zakharova, N. I.; Zadorozhny*y, I. K.

TITLE: Oxygen of photosynthesis and phosphates

SOURCE: AN SSSR. Doklady, v. 150, no. 2, 1963, 411-413

TOPIC TAGS: photosynthesis oxygen and phosphates, endocellular water, phosphorylation process, Elodea canadensis

ABSTRACT: This study investigated the proposal by Roux (C. R., Vol. 251, no. 18, 1925, 1960) that the oxygen during photosynthesis is formed from the hydroxyl radicals of phosphate ions. Measurement of tagged O sup 18 in endocellular water and in the oxygen given off by Elodea canadensis in solutions of H sub 2 O sup 18, KH sub 2 PO sub 4 sup 18, or Kh sub 2 P sup 32 O sub 4 sup 18 showed that the photosyn' esis oxygen comes only from water and not from phosphate ions. That phosphate ions do not enter into the photolysis (as opposed to phosphorylation process) was further confirmed by analysis of tagged phosphorus in the plants. "In conclusion, we express thanks to N. M. Nazarov and K. G. Semenyuk for assistance in this work." Orig. art. has: 2 tables.

ASSOCIATION: Inst. of Geochemistry and Analytic Chemistry, Academy of Sciences

Card 1/2

L 20789-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)/EWG(c) Pe-5 DD

ACCESSION NR: AR4046197 S/0299/64/000/016/G003/G003

SOURCE: Ref. zh. Biologiya. Svodnyy tom, Abs. 16G13

AUTHOR: Kutyurin, V. M.; Voskresenskaya, N. P.; Ulubekova, M. V.; Grishina, G. S.; Zadorozhnyy, I. K.

TITLE: Effect of light spectral composition on isotope fractionation of oxygen during its intake by hydrophytes

CITED SOURCE: Fiziol. rasteniy, v. 11, no. 1, 1964, 7-12

TOPIC TAGS: plant, hydrophyte, Elodea canadensis, Scenedesmus obliquus, light, oxygen, fractionation, reduction

TRANSLATION: Experiments were performed on Elodea canadensis and Scenedesmus obliquus with different light composition with and without the presence of sodium azide to find the mechanism of O_2 reduction. The principle difference in the nature of O_2 intake and reduction in red and blue light was found. The fact that O_2 intake is intensified in light compared to darkness, during poisoning of dark respiration with azide, points out the different nature of O_2 intake in light and

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L 20789-65
ACCESSION NR: AR4046197

darkness. However, oxygen conversion in blue light takes place according to a photochemical mechanism, without fractionation of its isotopes (alpha = 1000), but in red light it is similar to respiration in darkness with fractionation (alpha = 1.012). Sodium azide does not change the nature of the O_2 reduction mechanism of the Elodea in darkness. Not only does the O_2 intake activity of the Scenedesmus change in darkness, but fractionation also changes. The significance of a photochemical reducer and of enzyme systems participating in O_2 reduction is discussed. A similarity is found between O_2 photochemical reduction and photochemical decomposition of water with separation of O_2 during photosynthesis; both processes take place without fractionation of oxygen isotopes. Institute of Geochemistry and Analytical Chemistry AN SSSR.

SUB CODE: LS ENCL: 00

Card 2/2

[illegible], V.N.; [illegible], N.V.; [illegible], V.N.

Effect of light and oxygen on the photosynthesis and respiration of aquatic plants. Fiziol. rast. [illegible]. (MIRA 18:2)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Moscow.

KUTYURIN, V.M.; ULUBEKOVA, M.V.; KAZANSKIY, L.P.

Change in the rate of photosynthesis by Scenedesmus obliquus observed together with a growth in the hydrogen concentration in the medium. Dokl. AN SSSR 154 no. 3:725-727 Ja '64.
(MIRA 17:5)

1. Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo AN SSSR. Predstavleno akademikom A.P.Vinogradovym.

L 37027-65 EWG(1)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/
ACCESSION NR: AP4013340 EWG(a)-2/EWG(c) Pe-5 DD S/0020/64/154/003/0725/0727

AUTHOR: Kutyurin, V. M.; Ulubekova, M. V.; Kazanskiy, L. P.

TITLE: Change in the observable rate of Scenedesmus obliquus photosynthesis with increasing oxygen concentration of the medium

SOURCE: AN SSSR. Doklady, v. 154, no. 3, 1964, 725-727

TOPIC TAGS: photosynthesis, algae, oxygen

ABSTRACT: The purpose of the experiments was to determine the effect of dissolved oxygen when its concentration was steadily increased from the minimum value to that corresponding to air saturation (20%). The experiments involved the unicellular algae Scenedesmus obliquus in a phosphate buffer. The rate of oxygen release during photosynthesis was measured by the amperometric method in a special modification. Light intensity was 20,000 lux, with a CO_2 concentration of $8 \cdot 10^{-4}$ mol/liter. The oxygen concentration of the water was reduced in some cases by blowing through pure argon. The concentration of algal cells was 200 mg of dry weight per 100 ml of fluid. The rate of oxygen release was found to decrease as its concentration in the water grew. It was paralleled by a decrease in the rate of observable photosynthesis. The drop was not caused by a reduction of the CO_2 concentration.

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L 37027-65
ACCESSION NR: AP4013340

The author concludes that the constant rate of algal photosynthesis, when the solution becomes saturated with oxygen, does not reflect the true value of the rate of photosynthesis, but is much smaller. The observable constancy of the rate of oxygen release from a solution is related to the constant oxygen concentration of the medium. Orig. art. has: 4 figures.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo Akademii nauk SSSR (Institute of Geo- and Analytical Chemistry)

SUBMITTED: 03May63 ENCL: 00 SUB CODE: LS

NO REF SOV: 001 OTHER: 003

Card 2/2

ACCESSION NR: AP4042026 S/0020/64/157/001/0223/0226

AUTHOR: Kutyurin, V. M.; Ulubekova, M. V.; Nazarov, N. M.

TITLE: Influence of oxygen concentration on the rate of photosynthesis and respiration of algae

SOURCE: AN SSSR. Doklady*, v. 157, no. 1, 1964, 223-226

TOPIC TAGS: photosynthesis, life support, oxygen concentration, respiration, plant physiology, light intensity, Chlorella, Scenedesmus, Elodea, algae

ABSTRACT: The authors previously established (DAN, 154, no. 3, 1964) that the rate of photosynthesis in Scenedesmus obliquus decreases as oxygen concentration increases. The present investigation was designed to show what influence oxygen had upon algal photosynthesis and whether the photosynthetic rate was dependent upon the physiological state of algae and the intensity of light. Experiments were conducted on Scenedesmus obliquus at 22C, on Chlorella pyrenoidosa at 39C, and on Elodea canadensis at 22C. All algae were cultivated in phosphate

Card 1/2

ACCESSION NR: AP4042026

buffer solutions (pH 5.6). Kinetic determination of the isolation and absorption of oxygen was accomplished amperometrically. The results of the tests indicated that the influence of oxygen on the observed rate of photosynthesis depends upon the physiological state of the plant and the intensity of light. Algal respiration does not intensify as a result of preliminary illumination. The respiration of algae in darkness is directly proportional to oxygen concentration and differs from respiration in light. It is doubtful whether the "true" rate of algal photosynthesis can be determined by addition of the observed rates of photosynthesis and respiration in darkness. The authors express thanks to K. S. Spektrov for contributing the Chlorella pyrenoidosa culture. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskoge Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 15Aug63 ATD PRESS: 3059 ENCL: 00

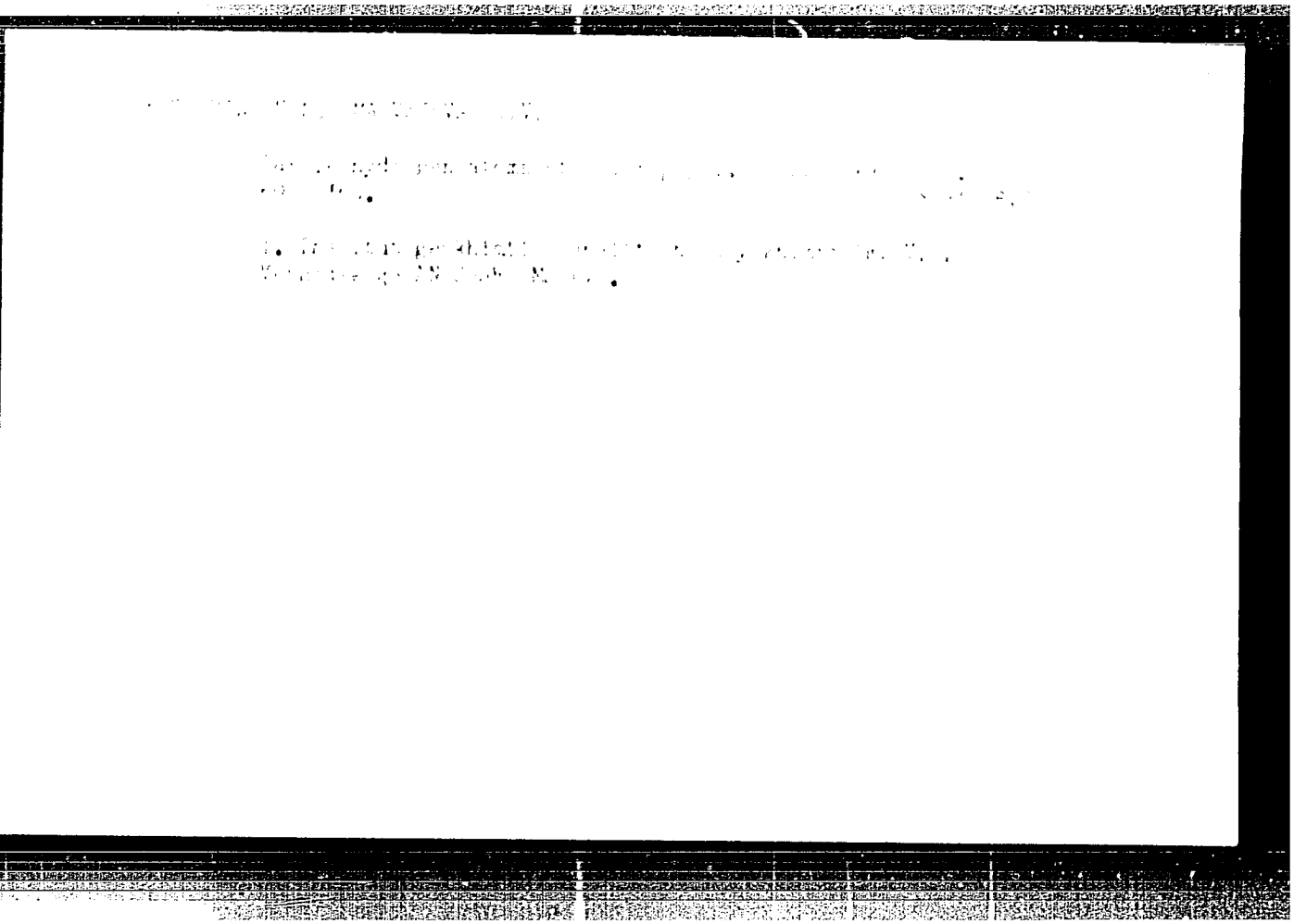
SUB CODE: LS NO REF SOV: 003 OTHER: 003

Card 2/2

KUTYURIN, V.M.; MATVEYEVA, I.V.; NAZAROV, N.[illegible]; [illegible]

Effect of light on the isotopic composition of oxygen secreted by plants. Dokl. AN SSSR 157 no.6:1474-1475 Ag '64.
(MIRA 17:9)

1. Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo AN SSSR. Predstavleno akademikom A.P. Vinogradovym.



POLIZOVA, L.Ya., kand. biolog. nauk; KUTYUKIN, V.M., kand. khim. nauk

Development of research on photosynthesis; session of the Department of Biochemistry, Biophysics and Chemistry of Physiologically Active Compounds. Vest. AN SSSR 35 no.4:100-102 Ap '65.

(MIRA 18:6)

L 27087-66 EWT(1) SCTB DD

ACC NR: AP6017417 SOURCE CODE: UR/0221/65/059/002/0205/0225

AUTHOR: Kutyurin, V. M. (Moscow)

ORG: none

TITLE: Mechanism of the decomposition of water and evolution of oxygen in the process of photosynthesis

SOURCE: Uspekhi sovremennoy biologii, v. 59, no. 2, 1965, 205-225

TOPIC TAGS: photosynthesis, radioisotope, plant chemistry, plant physiology, chlorophyll, oxygen, plant metabolism

ABSTRACT: In a general review of the subject, it is pointed out that the concept that oxygen evolved by plants in the course of photosynthesis is derived from carbon dioxide has been discarded, despite O. Warburg's insistence on its correctness; it has been definitely proven (e.g., in the author's own work on the isotope composition of O_2 evolved by plants) that this oxygen is formed by the decomposition of water. The mechanism by which this decomposition takes place has not been clarified as yet. It is proposed that further study of the phenomena involved by conducted along the following lines: one should establish whether water is decomposed as such, in the form of OH^- ions, or upon addition to carbonyl groups of organic compounds; whether chlorophyll, cytochrome, or an Mn complex compound oxidizes water and in what manner this oxidation takes place; and finally, the manner in which xanthophylls and flavins participate in oxygen metabolism with respect to conjugation of reactions on them with redox processes by which oxidation of water takes place. Orig. art. has: 8 formulas and 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 037 / OTH REF: 117

Card 1/1

VAYNSHTEYN, V.Ya., inzh.; KUTYYEV, G.A., inzh.; RAPPOPORT, M.A., inzh.

Recent development in the operational technology of classification yards. Zhel. dor. transp. 37 no.8:34-38 Ag '55.
(MIRA 12:8)

1.Zamestitel' nachal'nika stantsii Sverdlovsk-sortirovochnyy (for Vaynshteyn). 2.Zamestitel' nachal'nika Sverdlovskogo otdeleniya stantsii Sverdlovsk-sortirovochnyy (for Kutyyev). 3.Zamestitel' nachal'nika tekhnicheskogo otdeleniya dorogi, stantsiya Sverdlovsk-sortirovochnyy (for Rappoport).
(Railroads--Yards)

FEDENEV, G.S., kand.tekhn.nauk; OL'KHOVOY, A.I., inzh.; KUTYYEV, G.M., inzh.

Mechanization and automation in data processing and accounting operations of railroads. Zhel.dor.transp. 41 no.11:45-48 N '59. (MIRA 13:2)
(Railroads--Accounting, bookkeeping, etc.)

KUTYYEV, Georgiy Mikhaylovich; PIVENSHTEYN, David Il'ich; PREDE, V.Yu., red.; USENKO, L.A., tekhn.red.

[Work practices of the dispatchers of the Sverdlovsk Railroad] Opyt raboty dispetcherov Sverdlovskoi dorogi. Moskva, Vses. izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 37 p. (MIRA 14:4)

(Railroads--Train dispatching)

KUTYLEV, G.M., inzh.

Automatization of the operational planning processes of railroads. Vest.TSNII MPS 20 no.4:59-62 '61. (MIRA 14:7)
(Railroads--Management) (Cybernetics)

FEDENEV, G.S., kand.tekhn.nauk; KOL'SHCHIKOV, Ye.P., inzh.; MITYUSHEV, S.I., dotsent; OL'KHOVOY, A.I., inzh.; TITOVA, L.A., inzh.; KUTYYEV, G.M., inzh.; TREGUBOV, G.G., inzh.; ASHUKIN, D.D., kand.tekhn.nauk, retsenzent; MAKSIMOVICH, B.M., kand.tekhn. nauk, retsenzent; PETROVA, V.L., inzh., red.; VASIL'YEVA, N.N., tekhn.red.

[Mechanization and automation of information and accounting work in railroad sections] Mekhanizatsiia i avtomatizatsiia informatsionno-uchetnoi raboty na otdeleniiakh zheleznykh dorog. Moskva, Vses.izdatel'sko-poligr. ob"edinenie M-va soobshcheniia, 1962. 159 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.240). (MIRA 16:2)

(Railroads—Management)
(Electronic computers)

KUTYYEV, G.M., inzh. (Sverdlovsk)

Automation and mechanization of the processes of operational planning. Zhel.dor.transp. 44 no.1:24-29 Ja '62. (MIRA 14:12)

(Railroads--Management)
(Electronic calculating machines)

KUTYIEV, G.M., inzh.

Use of the information theory in the analysis of control processes in operational work on railroads. Trudy TSNII MPS no.258:4-36 '63. (MIRA 16:9)

(Railroads--Management)

KUTYYEV, G.M., inzh.; MARTYNOV, I.M., inzh.

Experimental calculations of an operational plan in the work of the Information and Accounting Center of the Tyumen railroad sector. Trudy TSNII MPS no.258:72-93 '63. (MIRA 16:9)
(Railroads--Management)

L 43196-65

ACCESSION NR: AP5007778 S/0231/65/000/001/0061/0064

AUTHOR: Kutyyev, G.M. (Engineer)

TITLE: Permissible levels of error in the transmission of information

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta. Vestnik, no. 1, 1965, 61-64

TOPIC TAGS: error tolerance, electronic computer, railroad mechanization, information transfer, information coding, railway traffic control

ABSTRACT: An investigation was made into the methods of determining the allowable margin of error in the transmission of information for computer-controlled railway transportation. In general, the method depends on the calculation of the maximum amount of information that could be lost during transmission without disrupting the operation of the system. Data from the field were first translated by telegraph operators from words and numbers into electrical signals. These signals were then transmitted to the information center where the data were punched on standard computer cards. Usually the information consisted of the number of locomotives, railway cars, etc. present at some particular station. Appropriate formulas are derived for evaluating the maximum permissible margin

Card 1/3

L 43196-65
ACCESSION NR: AP5007778

of error, and the numerical information resulting from the solution of these equations on the Ural-2 computer is graphed and tabulated. It is clear from the curves in Fig. 1 of the Enclosure that when m = 30 and Nr = 30,000, five errors are permissible for every 10 million transmitted symbols. The present accepted norm of one error for every million transmitted symbols is therefore sometimes inadequate. Orig. art. has: 1 figure, 1 table and 8 formulas.

ASSOCIATION: Khabarovskiy institut inzhenerov zheleznodorozhnogo transporta (Khabarovsk Institute of Railway Transport Engineers)

SUBMITTED: 00 ENCL: 01 SUB CODE: DP

NO REF SOV: 003 OTHER: 001

Card 2/3

KUTYJEV, K.M.

SUBJECT USSR/MATHEMATICS/Algebra CARD 1/1 PG - 476
AUTHOR KUTYJEV K.M.
TITLE PS-isomorphisms of partially well-ordered locally nilpotent groups.
PERIODICAL Uspechi mat.Nauk 11, 2, 193-198 (1956)
reviewed 1/1957

The author considers partially well-ordered locally nilpotent groups G being free of torsion. The semigroup of the positive elements γ of G is assumed to be isolated: For every $g \in G$ from $g^n \in \gamma$ there always follows $g \in \gamma$. The set of all semigroups of G forms a structure $S(G)$ with a zero- and a unit element. The PS-isomorphism of the group G onto the group G^* is an isomorphism φ which maps $S(G)$ onto $S(G^*)$. A semigroup γ without inverse elements is called pure. The author shows by aid of several lemmas and some auxiliary theorems that at the PS-isomorphism φ of the group G onto the group G^* the image $\varphi(\gamma)$ of a pure invariant semigroup with unit element is again a pure invariant semigroup with unit element. The group G^* is locally nilpotent too.

AUTHOR: Kutyyev, K.M. (Sverdlovsk) SOV/42-13-3-27/41

TITLE: On the Theory of Structural-Ordered Groups (l-Groups)(K teorii strukturno uporyadochennykh grupp (l-grupp))

PERIODICAL: Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 3, pp 238-239 (USSR)

ABSTRACT: A partially ordered group G being free of torsion contains an invariant semigroup Γ with unity, where Γ is the semigroup of the positive elements of G. Kontorovich [Ref 1,2,3] investigated the ideals of Γ and pointed to their importance for the structure of G. The author uses the notions (introduced by Kontorovich) of the convex semigroup $S = \Gamma \setminus P$, where P is a simple ideal of Γ, the disjunctors D(a) of an element $a \in \Gamma$ etc., for the investigation of structural-ordered groups with semigroups of positive elements. Some results are sketched.
There are 3 Soviet references.

Card 1/1

KONTOROVICH, P.G.; KUTYYEV, K.M.

Structurally ordered groups. Izv.vys.ucheb.zav.; mat. no.3: 112-120 '59. (MIRA 12:8)

1. Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo.
(Groups, Theory of)

KUTYYEV, K.M.

SL-isomorphism of ordered groups. Izv. AN SSSR. Ser. mat. 24 no. 6:807-824 N-D '60. (MIRA 14:1)

1. Predstavleno akademikom A.I. Mal'tsevym.
(Groups, Theory of)

KUTYYEV, K.M.

FS-isomorphism of an ordered group. Dokl. AN SSSR 135 no.6:1326-1329 D '60. (MIRA 13:12)

Predstavleno akademikom A.I. Mal'tsevym.
(Groups, Theory of)

KUTYYEV, K.M.

PS-isomorphism of some classes of R-groups. Izv. AN SSSR. Ser. mat 27 no.4:701-722 Jl-Ag '63. (MIRA 16:8)

(Groups, Theory of)

Country : GDR
Category : Chemical Technology. Chemical Products and Their Applications. -- Food Industry. H-26
Abs. Jour. : R. Zh. - Khim., No. 11, 1959 40505
Author : Vas, K., Fabri, I., Kutz, N., Orbanvi, T., and *
Institut. : Not given
Title : On the Consistency and Flow Properties of Tomato Concentrates

Orig. Pub. : Fruchtsaft-Ind, 3, No 6, 229-233 (1958)

Abstract : A simplified method for determining the consistency of tomato pastes is described. The spreading area of an exactly weighed sample of tomato product on a horizontal glass plate is measured at 2 different solids contents: the tomato product [paste] is subjected to a preliminary dilution with water to 2 predetermined consistencies. From the data obtained the consistency of the paste can be calculated; the correct value for the consistency is that which corresponds to the predetermined spreading area [sic].

Card: 1/1 * Szabo, G. Author's summary

11-149

KUTZ, V.

4) Decomposition of pectin with hydrogen peroxide — V. Kutz, V. Kutz. (*Elelmezési Ipar*) - Vol. 3, [illegible], pp. 370 - 379, 5 figs., 3 tabs.)

CH

(1) It has been established that the α-glucoside bonds of the pectin molecule may be split by the application of hydrogen peroxide and heat. The products of decomposition are soluble in water and contain aldehyde respectively carboxyl groups. Aluminum pectinates, non-soluble in water, can also be decomposed with hydrogen peroxide. Heat is freed during the process of decomposition. By reducing the temperature of decomposition, the rate of decomposition slows down and the peak rise in temperature is lower as well. According to the results, the temperature required for starting the process of decomposition is approximately 35—38° C. Though the decomposition of various pectins occurs at different temperatures, the process is always exothermic.

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930001-0

[illegible]

[illegible]
Qualitative [illegible]

Vol. [illegible], No. 11, Nov. 195[illegible] Budapest, Hungary [illegible]

So: Monthly List of East European Accessions, ([illegible]), LC, Vol. [illegible]
No. 3, March, 195[illegible]

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927930001-0"

KUTZ, V.

97. Methoxyl determination in pectines. V. Kutz. *Élelmez. ésIpar.* Vol. 10, 1956, No. 1, pp. 17–20, 2 figs., 4 tabs.

The procedure consists of the following operations: saponification, distillation of the methyl alcohol liberated, and its determination. The saponification was carried out by using a 5-*N* solution of sodium hydroxide. After this operation the methyl alcohol set free was steam-distilled and collected in a volumetric flask. The methyl alcohol concentration in this product was determined by the fuchsine-sulphurous acid method. Ethyl alcohol does not interfere with the determination and therefore the methoxyl number of pectines precipitated by means of ethyl alcohol may be determined directly without the elimination of the alcohol. This procedure proved more advantageous than the alkaline potassium permanganate method. The methyl alcohol content of the samples was directly read — after its absorbance had been measured with a photometer — by means of a specially plotted curve calculated by the method described. Tables are given for the rapid evaluation of the analytical data.

HUNGARY/Physical Chemistry - Colloid Chemistry. B-14
Disperse Systems

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4052

Author : Kutz Vaszilij
Title : Effect of the Amount of Associated Substances and Decomposition Products of Pectin on Its Gelling

Orig Pub : Elelm. ipar, 1956, 10, No 6, 185-188

Abstract : Value of the exponent n in the equation that correlates gel consistency H and concentration C: $H = KC^n$, wherein K is a constant, is characteristic of the given samples of pectin. On the basis of a quantitative processing of experimental data the conclusion is reached that solid pectin gels can be obtained only from pectins with a sufficiently high value of n. Quality of the pectin, especially the consistency of its gels, depend substantially on the presence of contaminations. In the manufacture of pectin it is necessary to take care that the value of n be the highest possible.

Card 1/1 - 248 -

HUNGARY/Analytical Chemistry. Analysis of Organic Chemistry.

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81378.

Author : Kutz V., Kutz V., Ott J.
Inst :
Title : The Role of Substances Present in the Photometrical Determination of Galacturonic Acid.

Orig Pub: Elem. ipar, 1957, 11, No 3-4, 71-73.

Abstract: In pectines besides the galacturonic acid (I) other substances are normally present (O.S.): arabinose, xylose, and mainly glucose, which in the photometrical determinations also form colored compounds with carbazole and affect the results of the determination. Therefore, the analyzed solution must be subjected to photometrical deter-

Card : 1/2

. HUNGARY/Analytical Chemistry. Analysis of Inorganic Chemistry. E

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81378.

mination twice: at 530 mμ (the maximum absorption for I) and 430 mμ (the maximum absorption for O.S.). The concentration of I is calculated from the optical densities of individual substances and of the analyzed mixture. When the glucose content is at approximately 40%, the error of determination for I is < 8%. -- S. Rosenfeld.

Card : 2/2

COUNTRY : HUNGARY
CATEGORY : Chemical Technology. Chemical Products and Their Applications. Carbohydrates and Their Processing.
ABS. JOUR. : RZhKhim., No 17, 1959, No. 62468

AUTHOR : Kutz, V.; Kutz,; Ott, J.
INSTITUTE : -
TITLE : Determination of Uronic Acids in Pectin

ORIG. PUB. : Elem. inar, 1958, 12, No 4, 124-128

ABSTRACT : Developed are two methods of determination of uronic acids. Proposed is the modification of the Tollen's method, in which the qantity of generated CO_2 is determined by its absorption in caustic from the gas over the solution. Termination of the reaction is determined by the sessation of gas volume increase above the reaction mixture. An average error of the method is ±0.73%, duration of the determination is shortened considerably. In accordance with the second - the carbazole method, to 1 ml of solution, containing 0.1-0.6mg

Card: 1/2

COUNTRY : H
CATEGORY :

ABS. JOUR. : RZhKhim., No 17, 1959, No. 62468

AUTHOR :
INSTITUTE :
TITLE :

ORIG. PUB. :

ABSTRACT Con'd : of the acids, are added drop by drop 3 ml of concentrated sulfuric acid (of 1.84 specific gravity) at $\leq 25^{\circ}$. The mixture is then heated for 2 minutes on a steam bath (temperature $\leq 80^{\circ}$, quickly cooled, and after that are added 0.1 ml of 4% alcohol solution of carbazole and after 25 minutes subjecting it to photometric measurments (λ 530 mμ). An average error is $\pm$ 0.82% -- G. Yudkovich.

Card: 2/2

KUTZ, Vaszili, dr.; TOROK, Szilveszter, dr.

Manufacturing problems of gelatinating pectin in the Hungarian food industry. Konzerv paprika no.5:160-164 S-O'63.

1. Konzerv - es Paprikaipari Kutato Intezet.

KUTZ, Vaszilij; KUTZ, Vaszilijne; OTT, Jozsef

Role of accompanying substances in the photometric determination of galacturonic acid. Elelm ipar 11 no.3/4:71-73 Je-Jl '57.

KUTZ, Vaszilij; KUTZ, Vaszilijne; OTT, Jozsef

Role of accompanying substances in the photometric determination of galacturonic acid. Elelm ipar 11 no.3/4:71-73 Je-Jl '57.

SPANYAR, Pal; KEVEI, Janosne; BLAZOVICH, Marta; DEMEL, Ervinne; KUTZ, Vaszilijne

Requirements for preserving vitamin C in fruit juices and refreshing drinks. Konzerv paprika no.6:189-193 N-D '62.

1. Kozponti Elelmiszeripari Kutato Intezet.

KUTZENDORFER, A.

"Water-power plants with Kaplan turbines for the highest heads in the world," p. 8 (Czechoslovak Heavy Industry /Special issue/ 1958, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 9, September 1958

Hutzendorfer, J.

Use of the waste of aluminum and its alloys. p. 270. HUTNIK. (Ministerstvo hutniho prumyslu a rudnych dolu) Praha. Vol. 4, no. 9, Sept. 1954.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

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✓ Cleaning of surfaces contaminated with radioactive isotopes. Zdeněk Dlouhý, Jaroslav Kutzendörfer, and Jaromír Malý (Czech. Acad. Sci., Prague). *Jaderná energie* 3, 65–73(1957).—The surfaces tested were: Al, brass, glass, rubber floor tile, oil varnish, removable varnish (chlorinated poly(vinyl chloride)), wood, canvas (cotton), poly(vinyl chloride) cloth. The contaminating soln. contained 1 to 5 μc./ml. of a mixt. of Ce^{141}, Ce^{144}, Sr^{89}, Y^{91}, Zr^{95}, Nb^{95}, I^{131}, La^{140}, and Ca^{45}. After 0.1 to 1.0 ml. of this was added to the surface, it was dried under an infrared lamp at 15 cm. distance, at 60–70° for 10 min. Glass had to be 1st cleaned with H_2SO_4–CrO_3 and rinsed thoroughly with water, before treatment with the contaminating soln. The activity was detd. with a Geiger counter with a mica window. Decontamination was performed by attaching the samples to a 78-r.p.m. stirrer and rotating them in a beaker contg. the decontaminating agent for 1 min., then for 0.5 min. in fresh decontaminating agent, then rinsing with water for 3 sec. The decontaminating agents were: Distd. water, tap water, HCl, H_2SO_4, HNO_3, HF, H_3BO_3, NH_4Cl, NaCl, Na_3PO_4, Na_2HPO_4, $NaHCO_3$, Na_2CO_3, K_2CO_3, HOAc, $(CO_2H)_2$, tartaric acid, citric acid, the NH_4 salts of the last 4 acids, various detergents, alone or in combination with the other solns., Turkey red oil, Mach's reagent (10% Na_3PO_4, 1–2% Na_2CO_3, 0.3–0.5% Neokal—a detergent), $AgNO_3$, Na_2SO_3, $KMnO_4$ + Na_2SO_3. Some were treated at a series of concns. For each, the % decontamination was calcd. The temp. of decontamination was usually 20° but was 80 or 100° in some cases. The best decontaminating agents were the inorg. acids at concns. from 0*M* to 0.001*M*, which achieved more than 90% decontamination with all surfaces except wood, which was difficult to decontaminate with any soln., because of its porosity. Only I^{131} was easier to remove with alk. solns. Water was poor except for glass, which was cleaned better with cold than with hot water. Detergents were disappointing. H. Newcombe

KUTZENDORFER, J.

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Measurement of the concentration of a natural radioactive aerosol by the filtration method and the method of electrostatic precipitation. Zenon Starčuk and Jaroslav Kutzendörfer (Czech. Acad. Sci., Prague). *Jaderná energie* 3, 97–103(1957).—The collection efficiency for a natural radioactive aerosol (decay products of Rn) of Whatman No. 4 filter paper at air flow velocities of 20–80 l./min., and by an electrostatic precipitator at air flow velocities of 25–55 l./min., was compared to that of a membrane ultrafilter of pore size 0.6 μ at air flow velocities of 17–42 l./min. The filters were backed by a perforated Al plate to prevent distortion. The precipitator had a W wire cathode and a collecting anode covered by a foil; the potential was 6–10 kv. The activity of the deposit was detd. with a Geiger counter with a mica window, using a Ra D, E, F standard. A calcn. relating the Rn concn. to the no. of counts is given. The effective half life of the decay products of Rn decreases with increasing time of sample collection and with increasing time between collection and counting. The efficiency of the filter paper was about 85% of that of the membrane, and that of the precipitator 34%, but their greater air flow velocities increased the sensitivity of detection. All 3 methods are suitable for detg. concns. of 10^{-10} μc./ml., sufficient for monitoring β and γ emitters, but not α emitters.

H. Newsome

KUTSEV DOKTOR, YAROSLAV

Distr: 4E3d

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Absorption of α-particles in filter paper and in membrane ultrafilters. Zenon Starčuk and Jaroslav Kutsendörfer (Ústav Jaderné Fys. ČSAV, Prague). *Jaderná energie* 3, 200–2(1957).—When an aerosol of the decay products of Rn is drawn through filter paper (Whatman No. 4) or an ultrafilter membrane (pore size 0.75 μ), a fraction of the α-particles is absorbed. This fraction was measured by detg. the ratio of β-activity (measured with a window-type Geiger-Müller counter) to α-activity (measured with a scintillation counter), and comparing it with that obtained on the collection electrode of an electrostatic precipitator, where no α-absorption occurs. The α-absorption on the ultrafilter membrane at a linear velocity of 1.6 m./sec. was 5–10%, on the filter paper at a linear velocity of 2.2 m./sec. it was 30–5%, at 3.2 m./sec. it was 38–45%. The α-energy (from Ra C') was 7.68 m.e.v. The results were used to calc. the Rn concn. in the air. H. Newcombe...

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LENGER, V., inz., dr.; STARCUK, Zenon; KUTZENDORFER, Jaroslav

Radioactive aerosol concentration measurement by the methods of filtration and of electrostatic precipitation. Jaderna energie 3 no.10:306-307 O '57.

1. Ustav hygieny prace a chorob z povolani, Praha (for Lenger).
2. Ustav jaderne fysiky, Ceskoslovenska akademie ved, Praha (for Starcuk and Kutzendorfer).

Distr: 43[illegible]

Decay of fission products from uranium-233, uranium-235, and plutonium-239 [illegible]

[illegible] (English abstract) One table and 6 extensive graphs of calculations from data listed in 67 references show that out of 43 elements created (Ge-Eu), 7 elements (Zr, Nb, I, Cs, Xe, Ba, La) have practically the same course, 9 elements (Sr, Y, Mo, In, Sn, Sb, Te, Ce, Pr) show slight differences, and 11 elements (As, Se, Br, Kr, Rb, Tc, Ru, Pd, Ag, [illegible]) differ considerably. The other 6 elements (Ga, Ge, Pd, Ag, Cd, Eu) have low fission yields; their activity varies below 0.1% (Ga, Cd) or a little above this value (Ge, Pd, Ag, Eu).

V. H. Gottschalk

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application. Chemical-technological Problems of Nuclear Engineering. H-7

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 57921

Author : Maly Jaromir, Machacek Vojtech, Kutzendorfer Jaroslav, Kourim Vaclav

Inst : -

Title : The Extraction of Metallic Uranium.

Orig Pub : Jaderna energie, 1958, 4, No 1, 9-18

Abstract : Investigation on the extraction of metallic U under laboratory conditions were conducted in 1954-1955. A technological plan for the extraction of U of reactor purify (under Czechoslovakian conditions) is cited. $UO_2(NO_3)_2 \cdot 6H_2O$ is extracted from a concentrated solution of sulfuric ether, then extracted once more with water; 500 ml of a solution of uranylnitrate (pH 2) is heated to boiling, and 500 ml of a 3% solution of H_2O_2 is added.

Card 1/2

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application. Chemical-Technological Problems of Nuclear Engineering. H-7

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 57921

$UO_4 \cdot 2H_2O$ is separated out, filtrated off at once, dried and fired at 340°; UO_3 extracted in this manner is reduced to UO_2 by means of dried H_2 at 600-800°. UO_2 is mixed with a 20% surplus of NH_4HF_2 and carefully pulverized in a wooden mortar; the mixture is heated in an Al-vessel at 150° for 8 hours (elimination of reaction gases): double-salt NH_4UF_5 is obtained, which, by thermal decomposition at 500°, is transformed into UF_4. UF_4 is reduced by the action of chips of metallic Ca (120-140% of the theoretical quantity) at a temperature of ~ 1800° in a medium of argon, in a graphite or firebrick crucible, the internal surface of which is covered with a powder of CaF_2 in a starch binder (1%). Bibliography 37 titles.

Card 2/2

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"Laboratories for work with radioisotopes" by J. Beranek, A. Pulkrab and M. Weber. Reviewed vy J. Kutzendorfer. Jaderna energie 8 no.8:300 Ag '62.

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The second scientific-technological conference on problems of electrical engineering, organized by the Department of Electrical Engineering and the local branch of the Polish Electrical Engineers Association of the Polytechnic College in Poznan, March 29-30, 196[illegible]. Przegl elektrotechn 38 no.8:346-347 Ag '6[illegible].

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KUTZNER, M. G. -- "Methods of Therapeutic Physical Culture Following Intraosteal Fixation of Breaks in the Lower Extremities." State Central Order of Lenin Inst of Physical Culture imeni I. V. Stalin. Moscow, 1955. (Dissertation for the Degree of Candidate in Pedagogical Sciences).

So.: Knizhnaya Letopis', No. 2, 1956.

KUTZCH, A. G. , A. A. MOISEYEV, and I. F. ARKAZYUCH.

Sydovye parovye turbiny. Dop. v kachestve uchebn. posobiia dlia vyssh. uchebn. zavedenii vodnogo transporta. Moskva, Morskoi transport, 1949. 460 p. diagrs.

Marine steam turbines.

LIC: VM 731.A2

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.